

REMARKS

The abstract and specification have been amended in order to correct grammatical and idiomatic errors contained therein. No new matter has been added.

In order to expedite the prosecution of the present application, Claims 1-7 have been canceled and replaced by newly presented Claims 8-20 which more particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Newly presented Claim 8 contains the subject matter of originally presented Claims 1 and 2. Newly presented Claim 10 contains the subject matter of originally presented Claims 1, 6 and 7. Newly presented Claim 16 contains the subject matter of originally presented Claims 1-5. No new matter has been added. Favorable consideration is respectfully solicited.

Claims 1 and 3 have been rejected under 35 USC 102(b) as being anticipated by Iwasaki. Claim 1 has been rejected under 35 USC 102(b) as being anticipated by Kanayama. Claims 1 and 2 have been rejected under 35 USC 102(b) as being anticipated by Kuramoto. Claims 1-4 have been rejected under 35 USC 102(a) as being anticipated by Koichi. Claims 2, 4 and 5 have been rejected under 35 USC 103(a) as being unpatentable over Iwasaki in view of Gareiss. Claims 2-5 have been rejected under 35 USC 103(a) as being unpatentable over Kanayama in view of Gareiss. Claims 3-5 have been rejected under 35 USC 103(a) as being unpatentable over Kuramoto in view of Gareiss. Claims 1-5 have been rejected under 35 USC 103(a) as being unpatentable over Gareiss. Applicant respectfully traverses these grounds of rejection and urges reconsideration in light of the following comments.

A first embodiment of the present invention is directed to a thermoplastic resin composition comprising 90-30 wt.% of (A) a thermoplastic resin selected from the group consisting of a polyamide and a styrene polymer, 5-60 wt.% of (B) a fibrous filler and 5-60 wt.% of (C) a whisker.

A second embodiment of the present invention is directed to a thermoplastic resin composition comprising 90-30 wt.% of (A) a thermoplastic resin comprising at least one member selected from the group consisting of a polyamide and a styrene polymer, 5-60 % by weight of (B) carbon fiber, 5-60 wt.% of a whisker having a specific gravity of at least 2 and a flame retardant comprising at least one member selected from the group consisting of a red phosphorus flame retardant and a hydrated metal flame retardant.

A third embodiment of the present invention is directed to a metalized molded product comprising a molded product made of a thermoplastic resin composition comprising 90-30 % by weight of (A) a thermoplastic resin, 5-60% by weight of (B) a fibrous filler and 5-60% by weight of (C) a whisker and a metal plating provided on the molded product.

The present invention is based on the discovery that a thermoplastic resin composition having a high fluidity and molding processability can be obtained when a specified amount of a fibrous filler is used together with a specified amount of a whisker. Preferred thermoplastic resins used in the present invention are a polyamide and a styrene polymer and the thermoplastic resin composition of the invention has an unexpectedly high utility when used in combination with a flame retardant or in the formation of a metalized molded product.

In the present invention, it is necessary that 5-60 wt.% of the fibrous filler be combined with 5-60 wt.% of the whisker in order for the fluidity of the composition and the mechanical strength of the molded product to be synergistically heightened. Since the whisker suppresses the increase in the total volume of the composition and improves the fluidity, the higher the specific gravity of whisker, the better. In the present invention, it is preferred that the specific gravity of the whisker be at least 2. As stated above, the surface of the molded product of the present

invention can be plated with metal and contain a flame retardant so that it can be used as housings and parts of electrical appliances for home and office use and have a particularly high flame resistance. It is respectfully submitted that the prior art cited by the Examiner does not disclose the presently claimed invention.

The Iwasaki reference discloses an electrically conductive thermoplastic resin composition formed by blending polyethylene terephthalate with potassium titanate whiskers and carbon fibers. This reference does not disclose a polyamide or a styrene polymer or a flame retardant being used in the composition disclosed there or a metal plating provided on the molded product. As such, it is respectfully submitted that the presently claimed invention is patentably distinguishable thereover.

The Kanayama et al reference discloses a polycarbonate resin composition obtained by melt-blending 100 parts by weight of a polycarbonate resin or mixture thereof with a polybutylene terephthalate resin melt-blended separately or simultaneously with aluminum borate whiskers and a polycarbonate resin and 5-40 wt.% glass fibers. In contrast to this reference, the present invention limits the thermoplastic resin to a polyamide or a styrene polymer or requires that a flame retardant be contained therein or requires that a metal plating be provided on a molded product. It is respectfully submitted that the Kanayama et al reference does not show these features of the present invention and, as such, the present invention is patentably distinguishable thereover.

The Kuramoto et al reference discloses a molded product made by incorporating a lactam with glass fibers and an inorganic whisker. The present invention is likewise distinguished over this reference in that it requires that the thermoplastic resin be selected from the group consisting of a polyamide and a styrene polymer or that a flame retardant be

contained in the thermoplastic resin composition. Since Kuramoto et al shows neither of these features, or suggests that a metal plating can be provided on the molded product, it is respectfully submitted that the presently claimed invention clearly is patentably distinguishable thereover.

The Koichi et al reference discloses a resin composition for shielding electromagnetic waves which comprises 100 parts by weight of a rubber-reinforced styrene resin or a mixture of the rubber-reinforced styrene resin and another thermoplastic resin, 50-30 parts by weight of a fiber covered with a metal, 3-20 parts by weight zinc oxide whisker and 0.5-10 parts by weight titanium oxide. However, this reference does not disclose the criticality of the fibrous filler and the whisker each being contained in an amount of from 5-60 % by weight in order to give the thermoplastic resin composition improved properties with respect to fluidity, moldability and mechanical strength of the molded product. As discussed in the present specification, the combination of the fibrous filler and the whisker in the claimed weight ranges synergistically heightened these properties. As such, it is respectfully submitted that the presently claimed invention is patentably distinguishable over this reference.

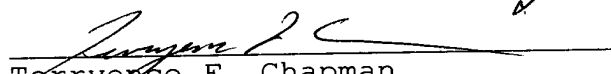
The Gareiss reference discloses thermoplastic molding compositions comprising a thermoplastic polymer, red phosphorus and a mineral filler. This reference also discloses that from 0 to 70% of other additives and processing aids can optionally be added thereto. Although this reference discloses that the additives can include fibers, such as glass fibers, this reference does not suggest that anything critical is associated with the presence or absence of these fibers. As discussed above, in the present invention, it is not only critical that the fibrous filler be present along with a whisker, it is critical that the fibrous filler and whisker be present in the claimed amounts. As such, it is respectfully submitted that the presently claimed invention is patentably

distinguishable over Gareiss et al in combination with any of the previously discussed references.

Gareiss et al '209 discloses flameproof thermoplastic molding materials comprising a polyamide, red phosphorus, a phenolic compound and, optionally, a fibrous or particulate filler, or a mixture thereof, and an elastomeric polymer. In this reference, the fibrous or particulate filler is an optional additive while, in the present invention, it is critical that the fibrous filler be present in an amount of from 5-60% by weight along with 5-60% by weight of a whisker. Since Gareiss et al '209 has no disclosure with the criticality of a fibrous filler being present, it is respectfully submitted that the presently claimed invention is clearly patentably distinguishable over this reference.

The Examiner is respectfully requested to reconsider the present application and to pass it to issue.

Respectfully submitted,


Terryence F. Chapman

TFC/smd

FLYNN, THIEL, BOUTELL
& TANIS, P.C.
2026 Rambling Road
Kalamazoo, MI 49008-1631
Phone: (269) 381-1156
Fax: (269) 381-5465

Dale H. Thiel
David G. Boutell
Ronald J. Tanis
Terryence F. Chapman
Mark L. Maki
David S. Goldenberg
Sidney B. Williams, Jr.
Liane L. Churney
Brian R. Tumm
Tricia R. Cobb
Robert J. Sayfie

Reg. No. 24 323
Reg. No. 25 072
Reg. No. 22 724
Reg. No. 32 549
Reg. No. 36 589
Reg. No. 31 257
Reg. No. 24 949
Reg. No. 40 694
Reg. No. 36 328
Reg. No. 44 621
Reg. No. 37 714

Encl: Marked-Up Substitute Specification and Abstract
Clean Substitute Specification and Abstract
Postal Card

136.05/03